Phenology. *Hedysarum neyshaboricum* has been collected in flower from May to June.

Etymology. The species is named after the type locality, the town of Neyshabor, in Khorasan Province, Iran.

Taxonomic relationships. The similar shape and number of leaflets confirm a close relationship between *Hedysarum neyshaboricum* and *H. paucifoliolatum*. The two taxa are similar in their ovate to ovate-lanceolate leaflets and similarly sized bracts and calyces. However, the new species differs by having a glabrous ovary (vs. densely short-appressed, white indument), a longer peduncle (20–27 cm vs. 7–10 cm), more densely flowered inflorescences (22- to 30-flowered vs. 10- to 15-flowered), and a larger corolla standard (15–17 × 13–14 mm vs. 10–11 × 7–8 mm) with a longer wing (7–8 mm vs. 4–5 mm). Furthermore, plants range to 50 cm in *H. neyshaboricum* (vs. to 35 cm in *H. paucifoliolatum*) and leaf blades are longer (11–14 cm vs. 3.5–6.5 cm). Measurements for *H. paucifoliolatum* are taken from the holotype.

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Literature Cited

Boissier, P. E. 1872. *Hedysarum*. Pp. 522–523 *in* P. E. Boissier (editor), Flora Orientalis, Vol. 2. H. Georg, Geneva.

IUCN. 2001. IUCN Red List Categories and Criteria, Version 3.1. Prepared by the IUCN Species Survival Commission. IUCN, Gland, Switzerland, and Cambridge, United Kingdom.

Ranjbar, M., H. Amirabadizadeh, R. Karamian & M. A. Ghahremani. 2004. Notes on *Onobrychis* sect. *Heliobrychis* (Fabaceae) in Iran. Willdenowia 34: 187–190.

———, R. Karamian & M. R. Johartchi. 2006. Notes on the taxonomy of *Hedysarum* (Fabaceae) in Iran. Ann. Bot. Fenn. 43: 152–155.

———, ———, Z. Tolui & H. Amirabadizadeh. 2007a. *Onobrychis assadii* (Fabaceae), a new species from Iran. Ann. Bot. Fenn. 44: 481–484.

———, ——— & N. Olanj. 2007b. A new species of *Hedysarum* (Fabaceae) in Iran and other new *Hedysarum* records. Bot. J. Linn. Soc. 155: 505–512.

Rechinger, K. H. 1951. Papilionaceae novae iranicae. Bot. Jahrb. Syst. 75: 338–339.

———. 1984. *Hedysarum*. Pp. 366–386 *in* K. H. Rechinger (editor), Flora Iranica, Vol. 157. Akademische Druck und Verlagsanstalt, Graz.

Vassiljeva, L. I. 1987. *In* Flora Partis Europaea URSS, Vol. 6. Leningrad.

Yakovlev, G. P., A. K. Sytin & J. R. Roskov. 1996. Legumes of Northern Eurasia, a Check-list. Royal Botanic Gardens, Kew, Richmond.

A New Species in *Elaphoglossum* sect. *Elaphoglossum* subsect. *Pachyglossa* (Dryopteridaceae) from Costa Rica and Panama

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Abstract. A new species of *Elaphoglossum* Schott in section *Elaphoglossum* subsect. *Pachyglossa* Christ is described and illustrated here. *Elaphoglossum skutchianum* A. Rojas is recognized from Costa Rica and Panama, and occurs at middle elevations in the Cordillera de Tilarán, Cordillera Central, and Cordillera de Talamanca. It is distinguished from the closely related *E. brevissimum* Mickel by its longer fronds. It is here proposed that *E. lankesteri* Mickel is a synonym of *E. cismense* Rosenst.

Resumen. Una nueva especie de *Elaphoglossum* Schott de la sección *Elaphoglossum* subsect. *Pachyglossa* Christ es descrita e ilustrada aquí. *Elaphoglossum skutchianum* A. Rojas es conocida para Costa Rica y Panamá, y ocurre a elevaciones medias en la Cordillera de Tilarán, Cordillera Central y Cordillera de Talamanca. Esta es distinguible de la muy relacionada *E. brevissimum* Mickel por sus frondas más largas. Se propone que *E. lankesteri* Mickel es un sinónimo de *E. cismense* Rosenst.

Key words: Costa Rica, Dryopteridaceae, *Elaphoglossum*, IUCN Red List, subsect. *Pachyglossa*, Panama.

Based on my research on ferns of Costa Rica, the following species is described as new.

Elaphoglossum skutchianum A. Rojas, sp. nov. TYPE: Costa Rica. Alajuela: Cantón de Alajuela, Distr. Sarapiquí, Colonia Virgen del Socorro, orillas del Río Sarapiquí, ca. de la nueva represa, 10°15′30″N, 84°10′20″W, 720 m, 27 Dec. 2004, *A. Rojas & C. Frias 6311* (holotype, CR; isotypes, K, MO). Figures 1, 2.

Haec species ab *Elaphoglosso brevissimo* Mickel frondibus longioribus, stipite pro ratione longiore et lamina latiore basi cuneata differt.

Epiphytic; rhizome 4–8 mm diam., short-creeping; rhizome scales 4–8 × 0.8–1.5 mm, linear-lanceolate, dark yellowish brown to dark brown, occasionally with fimbriate margin; fronds (40–)55–90(–105) cm, to 12 mm apart; phyllopodia 20–35 mm; stipes 1/4–2/5 of the frond length; stipe scales 2–6 × 0.5–1.5 mm, lanceolate to linear-lanceolate, brown, patent, present only on base of stipe, margin occasionally long ciliate; blades 31–66 × 7–11.5 cm, elliptic, chartaceous to subcoriaceous, apex acuminate, base narrowly to broadly cuneate; hydathodes absent; blade scales 0.2–0.5 mm diam., fimbriate, brown to black, margin long ciliate to fimbriate; fertile fronds (27–)40–58 cm, shorter than the sterile fronds; stipe 2/5–3/5 of the frond length; fertile blade (12–)19–33 × 3–5.4 cm, lanceolate to elliptic, apex acute to acuminate, base cuneate; intersporangial scales absent.

Distribution. *Elaphoglossum skutchianum* is known from Costa Rica and Panamá, in the Cordillera de Tilarán, Cordillera Central, and the Caribbean slope of the Cordillera de Talamanca at 400–1200 (–1600) m elevation.

IUCN Red List category. The new species should be considered Data Deficient (DD) according to IUCN Red List criteria (IUCN, 2001) because the size of the population has not been assessed. However, the species is found in several national parks and other protected areas in Costa Rica and Panama and is most likely not at risk.

Etymology. This species is dedicated to the naturalist Alexander Frank Skutch (1904–2004), son-in-law of Charles Lankester.

Discussion. *Elaphoglossum skutchianum* resembles *E. brevissimum* Mickel in its rhizome scales and evident leaf veins; however, *E. skutchianum* differs in its longer fronds ([40–]55–90[–105] cm vs. 24–37 cm long), stipe 1/4–2/5 of the frond length (vs. 1/20–1/15), and broader lamina (7–11.5 cm vs. 3.5–6.2 cm wide) with a cuneate (vs. attenuate) base.

The new species also resembles *Elaphoglossum cismense* Rosenst. in frond length and size, but differs by its longer rhizome scales (4–8 mm vs. 1–3[–5] mm long), evident veins (vs. mostly obscure), fertile fronds shorter than the sterile fronds (vs. subequal or longer), lower altitudinal distribution ([100–]400–1200[–1600] m vs. 1600–2800[–3000] m), and epiphytic habitat (vs. epiphytic or more commonly terrestrial) (Fig. 2).

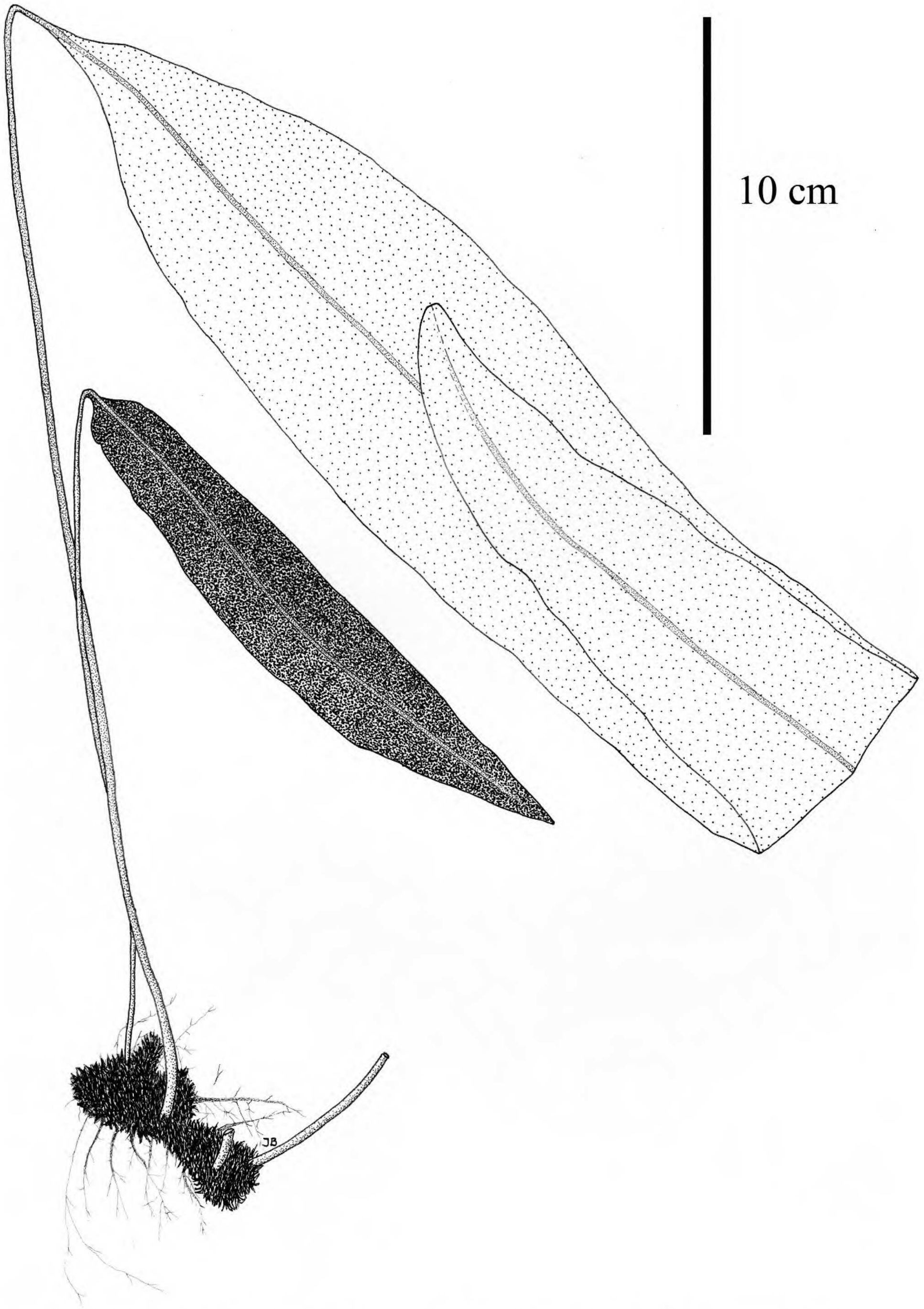

Figure 1. Habit of the type specimen of *Elaphoglossum skutchianum* A. Rojas (*Rojas & Frias 6311*, CR).

Elaphoglossum lankesteri Mickel has been considered distinct from *E. cismense* (Mickel, 1992, 1995); however, I find no appreciable differences between the two species. Accordingly, I consider the former name a synonym of the latter. Three paratypes of *E. lankesteri* (*Hammel et al. 17576*, NY; *Smith et al. 2272*, NY; and *Werff & Hardeveld 6617*, NY), however, represent the new species described in this paper, not *E. cismense*.

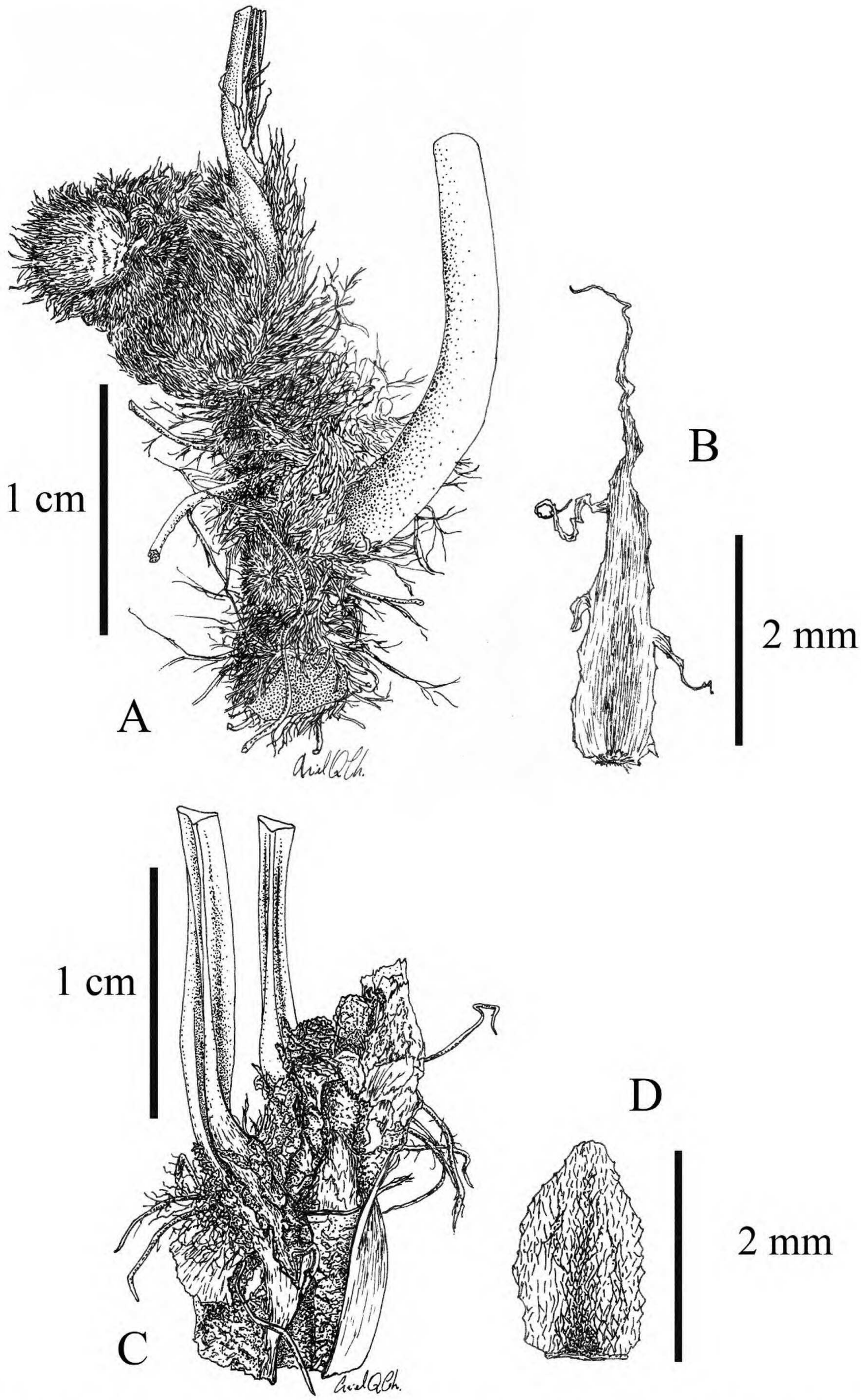

Figure 2. A, B. *Elaphoglossum skutchianum* A. Rojas, drawn from the type *Rojas & Frias 6311* (CR). —A. Rhizome detail. —B. Rhizome scale. C, D. *Elaphoglossum cismense* Rosenst., drawn from the representative specimen *Umaña & Chacón 565* (CR). —C. Rhizome detail. —D. Rhizome scale.

Following the infrageneric classification of *Elaphoglossum* Schott published by Mickel and Atehortúa (1980), the new species is included in section *Elaphoglossum* based on its linear to lanceolate rhizome scales, lack of hydathodes, and the leaf blades with minute stellate scales. It is more precisely placed in subsection *Pachyglossa* Christ based on its chartaceous to subcoriaceous leaf blades and distinct phyllopodia.